UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
TECHNOLOGY DEVELOPMENT AND APPLICATION, ECOLOGICAL SCIENCES
WASHINGTON, D.C.

and the

TEXAS AGRICULTURAL EXPERIMENT STATION
TEXAS A&M UNIVERSITY
COLLEGE STATION, TEXAS

# NOTICE OF GERM PLASM RELEASE OF 'T-587' OLD WORLD BLUESTEM

The United States Department of Agriculture, Soil Conservation Service, and the Texas Agricultural Experiment Station announce the germ plasm release of 'T-587' old world bluestem (*Dichanthium* spp.), PI-421783.

The original assembly of approximately 80 collections was initially grown at the SCS Nursery in San Antonio, Texas, in the early 1950's; reestablished as a composite at the Holt Equipment farm, San Antonio, Texas, after the close of the nursery in the early 1950's; and finally moved to the Knox City Plant Materials Center, Knox City, Texas, in 1965 and assigned the accession number PMT-587.

'T-587' old world bluestem is a perennial warm-season grass. Royal Botanic Gardens, Kew, England, identified three species in the herbarium sent them as *Bothriochloa insculpta, B. bladhii,* and *Dichanthium annulatum*. In addition, others have identified a form *Bothriochloa intermedia* in the complex. The mixture has been evaluated at the Knox City Plant Materials Center from 1965 until 1981 and showed good to excellent vigor and stand, good leafiness, and excellent forage potential. In over 140 field plantings throughout Texas, including over 100 counties, 'T-587' has proven quite palatable, a high forage producer and very persistent under heavy grazing, and widely adapted to our diverse climate and soils. It has proven its adaptation as a pasture or range grass and to be very useful as a stabilization plant for critical areas. Quality analysis shows 'T-587' to be equal to or higher than King Ranch, caucasian, and several other standards for yield, digestibility, and protein content.

'T-587' old world bluestem lacks the necessary winterhardiness to be adapted to the severe winters in the Texas Panhandle area and in the State of Oklahoma. The area of adaptation within Texas appears to include all major land resource areas south of a line from Cochran County in west Texas to Bowie County in east Texas with a normal precipitation of 14 inches or more.

Notice of Germ Plasm Release of 'T-587' Old World Bluestem (Continued)

Plantings in areas with less precipitation would need additional water for survival, either from irrigation or additional runoff. 'T-587' is adapted to a wide range of soil textures, with the exception of deep sands and poorly drained soils; it is probably best adapted to tighter soils. Seeding rate is 1.2 pounds PLS per acre.

Limited quantities of seed will be maintained at the Knox City Plant Materials Center for use by research personnel. Limited quantities of seed for commercial production or for research purposes can be obtained from the Knox City Plant Materials Center from 1982 to 1985.

George C Marks — AUG 18

State Conservationist
Soil Conservation Service, Texas

Date

[illegible] — Oct. 2, 1981

[illegible]ogical Sciences
Technology Development and Application
Soil Conservation Service, Washington, D.C.

Date

[illegible] — SEP 08 1981

Director
Texas Agricultural Experiment Station
College Station, Texas

Date

Basis for Germ Plasm Release of

'T-587' Old World Bluestem, *Dichanthium* Spp.

This assembly of introduced bluestems was initially grown by the Soil Conservation Service at the SCS Nursery in San Antonio in the early 1950's. It comprised approximately 80 collections of plant introductions brought in by Dr. J. R. Harlan, ARS, at that time stationed in Oklahoma. These were thought to be the accessions out of his world assembly that had the least cold tolerance. When the nursery was closed in the early 1950's, this group of multispecies introduced bluestems was harvested from the rod row area as a composite by combining. A seed increase field was subsequently established at the Holt Equipment farm in San Antonio, Seed was harvested from this field for several years, but little distribution was made of the seed. When the SCS Plant Materials Center was established at Knox City, Texas, in 1965, an increase field of 'T-587' old world bluestem composite from the Holt Equipment Company seed production was established in the field designated "A" block. This field provided the bulk of the seed that was distributed during the period 1966-1968. Larger fields were subsequently established at Knox City.

During each of the previously mentioned harvests, selection pressures were exerted on the original composite. Also, winter temperature further eliminated the less cold tolerant individuals. As a result, the existing mixture is not representative of the original mixture. Indeed, each harvest throughout the years 1962-1980 could vary depending upon the stage of maturity at harvest. As a result, it is virtually impossible to adequately describe the existing heterozygous composite to enable a field inspector for seed certification to determine if the subject field is, in fact, representative of 'T-587' old world bluestem.

From past experience wfth early introduced bluestem releases, we have found that it is difficult to maintain interest in certified seed production in this group. All of the commercial production in Texas is being harvested from existing pastures or solid seedlings. Much of the seed is sold from neighbor to neighbor; however, a substantial quantity moves through the commercial channels.

A limited amount of 'T-587' old world bluestem is being harvested and sold in the seed trade now. This is occurring primarily in the area north of the area of adaptation of Medio, Gordo, and Angleton bluestems. A demand has developed for the seed of 'T-587' old world bluestem in the same area of adaptation where King Ranch is used; and we feel relatively certain that this has become, or will be, a "local ecotype" or "types" evolvement.

To maintain true foundation seed fields would require that several fields should be strategically located throughout the state to retain the genetic diversity best adapted to the locale. This would be extremely difficult to do and would not insure that genetic shifts could be prevented. Refer to release notice for other information.